IN THE CLAIMS

Claims 130-138 are cancelled and the following new claims are presented in their place.

139. The combination of:

rectifier means: i) connected with an ordinary electric utility power line by way of a first and a second AC input terminal, and ii) operative to provide a DC voltage at a DC output;

self-oscillating inverter circuit connected with said DC output and operative to provide a sinusoidal output voltage of relatively high frequency across a pair of AC output terminals, one of the AC output terminals being electrically connected with the first AC input terminal, the inverter-circuit comprising an L-C circuit: i) having a capacitor and an inductor, ii) being connected in circuit with the AC output terminals in such manner that the capacitor is effectively connected across the AC output terminals, and iii) being resonant at or near said relatively high frequency; and

load means connected with the AC output terminals and operative to absorb most of the power being provided therefrom.

140. The combination of:

rectifier means connected with an ordinary electric utility power line by way of a first and a second AC input terminal and operative to provide a DC voltage at a DC output;

self-oscillating inverter circuit connected with said DC output and operative to provide a sinusoidal output voltage of relatively high frequency across a load means connected with a pair of AC output terminals, the load means being operative to absorb most of the power being provided from the AC output terminals, one of the AC output terminals being at substantially the same electrical potential as that of the first AC input terminal, the inverter circuit comprising an L-C tank circuit connected in circuit with the AC output terminals and having a capacitor and an inductor, the L-C tank circuit being resonant at or near said relatively high frequency, one terminal of the capacitor being connected with the first AC output terminal.

141. The combination of:

rectifier means: i) connected with an ordinary electric utility power line by way of a first and a second AC input terminal, and ii) operative to provide a DC voltage at a DC output;

self-oscillating inverter connected with said DC output and operative to provide a substantially squarewave output voltage of relatively high frequency across a pair of squarewave output terminals, one of the squarewave output terminals being electrically connected with the first AC input terminal, the inverter-circuit comprising an L-C series-circuit: i) having a capacitor and an inductor, ii) being connected with the squarewave output terminals in such manner that one of the terminals of the capacitor is connected with the first AC input terminal, iii) having a load means connected across the capacitor, and iv) being resonant at or near said relatively high frequency, thereby to provide a substantially sinusoidal high-frequency voltage across the load means, which load means is operative to absorb most of the real power being provided from the squarewave output terminals.

142. In a self-oscillating inverter adapted to be powered from a DC source having a center-tap and to provide an essentially squarewave voltage output, the DC source being connected with and powered from an ordinary electric utility power line by way of a pair of supply conductors, the center-tap being electrically connected with one of the supply conductors, the inverter comprising a pair of alternatingly conducting switching transistors connected by way of a mid-point in series across the DC source, the squarewave voltage output being provided between the center-tap and the mid-point, the improvement comprising:

a series-connected combination of an inductor and a capacitor connected between the center-tap and the mid-point, the series-connected combination: i) having one of the terminals of its capacitor connected with the center-tap, ii) having a natural resonance frequency equal to or near the fundamental frequency of the squarewave voltage output, and iii) being operative to provide a substantially sinusoidal voltage across a load means effectively connected in parallel with the capacitor, the load means being operative to absorb most of the real power being provided from the squarewave voltage output.

143. The combination of:

rectifier means connected with an ordinary electric utility power line and operative to provide a DC voltage across a set of DC terminals;

inverter means having control input means, the inverter means being connected with the DC terminals and operative to provide a substantially squarewave voltage across a pair of squarewave output terminals in response to a drive signal being provided to the control input means;

an L-C series-circuit having a tank-capacitor and a tank-inductor, and being effectively connected across the squarewave output terminals;

load means effectively connected in parallel with the tank-capacitor; and

feedback means connected in circuit between the squarewave output terminals and the control input means, the feedback means: i) comprising saturable inductor means effectively connected with the control input means, and ii) being operative to provide the drive signal; thereby to cause the inverter to self-oscillate at a frequency equal to or higher than the natural resonance frequency of the L-C series-circuit;

whereby: i) most of the real power provided from the squarewave output terminals flows into the load means, and ii) the saturable inductor means and the L-C series-circuit are co-determinative of the frequency of self-oscillation.

144. The combination of:

rectifier means connected with an ordinary electric utility power line and operative to provide a DC voltage across a set of DC terminals;

inverter means comprising a first and a second transistor connected in circuit with the DC terminals, each transistor having a control input, the transistors being operative, in response to drive signals provided at their control inputs, to alternatingly conduct, thereby to cause the inverter means to provide a substantially squarewave voltage across a pair of squarewave output terminals;

an L-C series-circuit having a tank-capacitor and a tank-inductor, and being effectively connected across the squarewave output terminals;

load means effectively connected in parallel with the tank-capacitor; and

feedback means connected in circuit between the squarewave output terminals and the control inputs, the feedback means comprising saturable inductor means and being operative to provide the drive signals, thereby to cause the inverter to self-oscillate at a frequency equal to or higher than the natural resonance frequency of the L-C series-circuit;

whereby: i) most of the real power provided from the squarewave output terminals flows to the load means; and ii) the saturable inductor means and the L-C series-circuit jointly determine the frequency of self-oscillation.

ARGUMENTS IN SUPPORT OF CLAIMS

In evaluating the present claims, Examiner should make note of the following points.

a) There is nothing in the Franke reference to indicate that the L-C series-circuit shown there is resonant at the inversion frequency. Instead, it appears that the Franke inverter may be operating at a frequency substantially lower than the natural resonance frequency of his L-C series-circuit.

b) Franke's inverter is driven by control circuit 21, which control circuit is not synchronized with the natural oscillations of the L-C circuit.

c) There is nothing in the Franke reference to show that the voltage provided to the load is sinusoidal. Instead, what appears to be the case is that the output voltage is provided in the form of bursts or trains of decaying sinusoidal voltages.

d) By way of claims 143 and 144, Applicant has re-introduced the basic claims (124-128) previously allowed (in Paper #32), and then rejected (in Paper #35) as anticipated by Locklair.

Now, however, Applicant has provided more structure. In particular, to clearly distinguish over Locklair and Pintell, the invention is now restricted by having the load connected in parallel with the tank-capacitor of the L-C series-circuit.

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